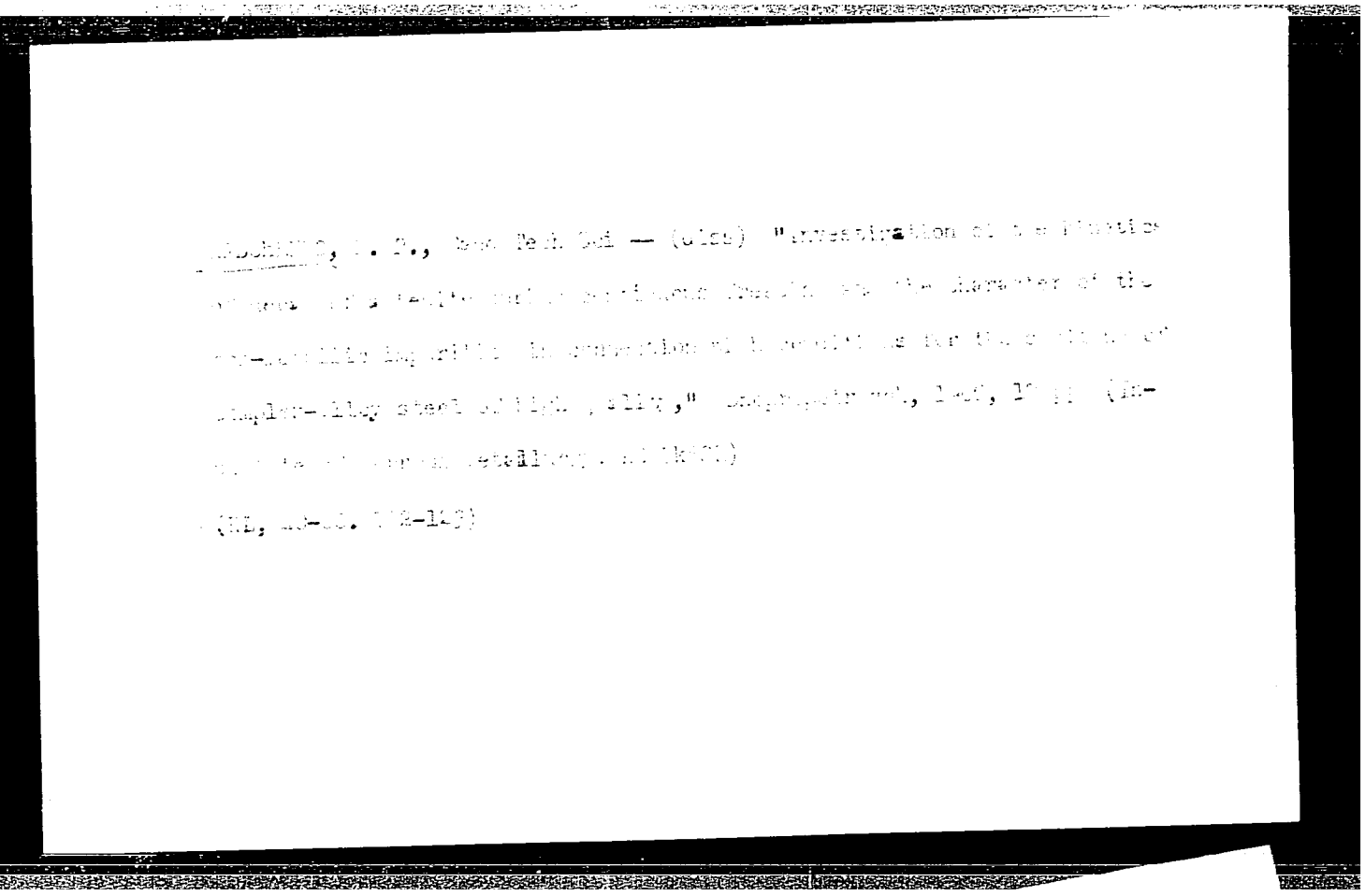

11710 1454 1041

29083
S/521/60/000/014/004/015
E111/E135

AUTHOR: Radchenko, R.P.

TITLE: Selection of rational schedules for the heat treatment of parts

SOURCE: Akademiya nauk SSSR. Sibirskoye otdeleniye. Khimiko-metallurgicheskiy institut. Trudy, no.14. Novosibirsk, 1960. Metallovedeniye i proch.ost' metallov. 35-49

TEXT: The author shows, taking type 35ХНМ (35KhNM) steel (chromium-nickel-molybdenum) as an example, how thermo-kinetic diagrams can be used to choose correct heat-treatment conditions. Such diagrams are superior to isothermal diagrams as indications of austenite behaviour, and have been used at the Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Combine) since 1941; their use is increasing both in the USSR and Germany (e.g. Ref.13: A.A. Popov, L.V. Mironov. Termicheskaya obrabotka metallov (materialy konferentsii), Mashgiz, 1952, pp.65-77 (Heat Treatment of Metals, Materials Conference, published by Mashgiz, 1952, pp.65-77) and Ref.16: A. Rose, W. Strassburg, Anwendung des Zeit-Temperatur-Umwandlungs - Schaubildes für Kontinuirliche Abkühlung

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auf Frage der Wärmebehandlung. Archiw fur das Eisenhuttenwesen, H. 11/12, 1953, 505-514). At the Kuznetsk Combine cooling rates of 1500-2000 °C/min are possible, and up to 3500-4000 °C/min with special 2.5 x 2.5 x 65 mm specimens. A modified (by B.Ya. Pines) Chevenard dilatometer is used. The 5 x 5 x 65 mm specimen in the dilatometer is heated to (Ac_3 + 50) °C in 1 hour 40 min, and then cooled at 0.3 to 1500-2000 °C/min. Time was recorded every 100 °C, reckoned from the crossing of the Ac_3 point. Cooling curves were constructed, all curves starting from the same point. The temperature scale was linear, the cooling time logarithmic. With steels having high critical hardening rates the temperature drop in the first second has to be allowed for, but not otherwise. To construct the thermo-kinetic diagram the start and finish of each transformation is marked on the cooling curves and the points are formed. The properties of the steel studied depended not only on the amount and quality of the decomposition products but also on residual austenite (determined by P.V. Romanov). Different cooling conditions gave: 1) complete austenite decomposition in the upper critical temperature range forming ferrite and pearlite;

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2) completion of austenite decomposition only at 500-300 °C with formation of intermediate structures; 3) only intermediate transformation of austenite to form granular structures; 4) austenite transformation in the intermediate and martensite ranges; 5) transformation into martensite. To study the influence of steel production conditions on the austenite, transformation diagrams for two heats, one deoxidized with aluminium, and the other not deoxidized, were obtained; aluminium was found to displace all transformation regions towards higher cooling rates. The effect of heating temperature on austenite transformation during cooling was studied jointly with P.V. Romanov. Heating to an inter-critical temperature of 745 °C does not lead to complete $\alpha \rightarrow \gamma$ transformation, only pearlite but not ferrite going into the austenitic state. The intermediate range of the austenite transformation becomes separate and is displaced towards higher cooling rates. At such rates the upper ferrite-pearlite is displaced towards lower temperatures. The martensite region is displaced towards lower cooling rates. Raising heating temperature to 765 °C displaces the ferrite-

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pearlite region towards lower cooling rates. The intermediate region combines with the martensitic and extends considerably towards low rates. Raising heating temperature to 790 and 820 °C leads to further development and extension of the intermediate region to low rates. Heating above (Ac3 + 50) °C makes the austenite more stable by increasing the uniformity of carbon distribution; all regions are therefore displaced towards lower cooling rates. Some of these effects have been reported (e.g. Ref.11: Resheniya nauchno-tekhnicheskoy konferentsii po metallovedeniyu i termicheskoy obrabotke, posvyashchennoy problemam konstruktsionnoy stali (Resolutions of the Scientific-Technical Conference on Science of Metals and Heat Treatment, devoted to the Problems of Constructional Steel). Mashgiz, 1949). Study of the properties of structural components formed during hardening of large parts showed that in the hardened state the lowest toughness is possessed by the martensitic structure. Conditions under which intermediate structures could be formed should be avoided. Cooling curves for the centre of large parts are needed for applying thermo-kinetic diagrams to problems of heat treatment of such parts. The author obtained such cooling curves for a

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specimen 300 mm long and 130 mm in diameter, using the method he developed at the Kuznetsk Combine in 1947. A 5-mm diameter, 100-mm deep hole was drilled in the specimen and a tube 12 mm in diameter, 300 mm long, was welded on. After the specimen had been heated to 860 °C and held for 2 hours a platinum/platinum-rhodium thermocouple was inserted in the tube and the whole was quenched in oil, water or through water in oil. Temperatures at the centre were taken every 5-10 seconds, and the resulting curve was plotted on the thermo-kinetic diagram. The microstructures obtained with the different quenching media were studied, and hardness measured. At the centre of the large specimen these coincide with those of dilatometric specimens cooled under conditions similar to those prevailing at the centre. Thus, knowing the thermo-kinetic curve for austenite transformation of the steel, the properties of the transformation products and the cooling curve for the part, the heat-treatment schedule for the part can be chosen without having to use the method requiring tests on specimens treated in many different ways. Each cooling time from Ac_3 to 100 °C has a single curve corresponding to it; such curves, found experimentally for

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one steel of a given class, can be applied to other steels of the same class. The author gives experimental results confirming the applicability of this method of choosing heat-treatment conditions.
There are 7 figures, 2 tables and 20 references: 16 Soviet-bloc and 4 German.

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S/137/61/000/003/042/069
A006/A101

AUTHOR: Radchenko, R.P.

TITLE: The effect of the heating temperature on the extension depth of martensite and intermediate structures in hardened steel

PERIODICAL: Referativnyy zhurnal.Metallurgiya, no. 3, 1961, 21, abstract 3Zh132 ("Tr. Khim.-metallurg. in-ta, Sib. otd. AN SSSR", no. 14, 1960, 51 - 56)

TEXT: The effect of heating temperature within the 780-980°C range on the hardenability of 30XГC (30KhGS) steel was studied by the method of butt hardening of standard specimens. Micro- and macrostructures were studied as well. A rise of the heating temperature for hardening increases the extension depth of intermediate structures. The maximum content of residual austenite over the length of the hardened specimen corresponds to the zone of intermediate structures. Tempering at 300 - 400°C entails increased hardness of these structures as a result of decomposition of the residual austenite. L. V.

[Abstracter's note: Complete translation.]

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S/137/61/000/003/005/069
A006/A101

AUTHOR: Radchenko, R.P.

TITLE: The effect of some factors of the melting technology on the quality of large-size steel structures

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 3, 1961, 44, abstract 3V316 ("Tr. Khim-metallurg. in-ta. Sib. otd. AN SSSR", 1960, no. 14, 57-65)

TEXT: The investigation of 35XHM (35KhNM) steel, melted in 30-ton electric furnaces by different technological variants, shows that the composition and properties of the refined slag affect directly the contamination of the steel with coarse oxide impurities of the silicate type. It was established that the appearance of hair cracks in the finished metal was caused by the contamination of the steel with coarse oxide impurities. The higher number of hair cracks and their considerable extent are observed rather in the lower section of the ingot; this is due to the presence of turnings and oxidized surfaces which develop when the first portion of liquid metal is filled into the mold. The total number of

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The effect of some factors ...

impurities is not high, they consist mainly of alumina streaks and of silicate glasses and their conglomerates. An increase of the Al supply to the furnace from 0.3 to 0.8 kg/ton of steel, when using a refining slag mixture of 125 kg fluorspar, and 500 kg lime, does not increase the amount of alumina in the steel.

V. G.

[Abstracter's note: Complete translation.]

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B/137/61/000/003/006/069
A006/A101

AUTHOR: Radchenko, R.P.

TITLE: Investigation of the contamination of chrome-nickel-molybdenum steel ingots

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 3, 1961, 45, abstract 3V318 ("Tr. Khim-metallurg. in-ta Sib. otd. AN SSSR", 1960, no. 14, 67-76)

TEXT: Non-metallic impurities in Cr-Ni-Mo electric steel were studied by two methods: on a metallographical section at 100 and 500 magnification and after electrolytical separation at 320 magnification. To obtain samples for analyses of contamination of the metal with non-metallic impurities, a plate cut out of a 1.2 ton ingot was divided into 5 zones: zone I corresponded to the feed-head section, zones II, III and IV to about 10, 50 and 75% of the cutting along the ingot height; zone V to the lower cutting of the ingot. It was established that the contamination of the metal along the height and width of the ingot, differed both in the amount and nature of the non-metallic impurities. The investigation of non-metallic impurities on the metallographic section showed that contamination and porosity calculated by the average index, were highest in the top

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section and least in the lower section. The feed head section was contaminated with silicates and Mn sulfides. The metal of specimens II, III and IV was mainly contaminated with alumina. Investigation of non-metallic impurities along the ingot height revealed that corundum and quartz inclusions occurred most frequently, and silicate glasses and spinels were rarer observed. The least amounts of stable non-metallic impurities were contained in zone II. The metal zone adjacent to the lateral surface of the ingot was contaminated with corundum of different dimensions. Highest porosity of the metal was observed in zones I and III.

V. G.

[Abstracter's note: Complete translation.]

S/137/62/000/006/100/163
A160/A101

AUTHOR: Radchenko, R. P.

TITLE: The effect of alloying elements on the transformation of austenite during continuous steel cooling

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 23, abstract 6I140 (In collection: "Proiz-vo trub", no. 5, Khar'kov, Metallurgizdat, 1961, 155 - 166)

TEXT: Investigated was the effect of alloying with Cr up to 2.58%, Ni up to 5.15%, Mo 0.44%, Mn up to 1.69%, S up to 0.4% and with P up to 1.24% on the critical points and the thermokinetic diagrams of austenite transformation in steel with 0.31 - 0.47% C, and of the complex alloying (with Cr-Ni, Cr-Mn, Cr-Si, Mn-Si, Cr-Si-Mn) in primarily commercially-produced steel with 0.38 - 0.42% C. Confirmed are the known rules of increasing the resistance of supercooled austenite during the alloying of steel with Cr, Ni, Mn, Mo and P and in all complex-alloyed steels. The alloying with Cr, Ni, Mo and Mn contributed to the development of intermediate-transformation zones on diagrams, joining either the perlite

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phase (Ni, Mn, Cr-Ni, Mn-Si), martensite phase (Cr, Mo, Cr-Si) or separate phases (Cr-Mn, Cr-Si-Mn).

[Abstracter's note: Complete translation]

L. Frumer

Card 2/2

RADCHENKO, R.P. [Radchenko, R.P.]

Selection of the rational regime in the thermal treating of items in process. Avtomatich. metallurgiia 16 no.1:154-169 Ja-Mr '62.

L 36318-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(b)/EWA(c) MJW/JD
ACCESSION NR: AP5010134 UR/0096/64/000/011/0060/0063

AUTHOR: Radchenko, R. P.(Candidate of technical sciences); Plekhanov, G. P. (Engineer)

TITLE: Investigation of the austenite transformation and physical and mechanical properties of 12Kh1MF steel

SOURCE: Teploenergetika, no. 11, 1964, 60-63

TOPIC TAGS: steel, metal property, austenitic steel/ 12Kh1MF steel

Abstract: The articles shows that the kinetics of the austenite transformation during continuous cooling of 12Kh1MF steel has a complex scheme, i.e., at a given cooling rate the decomposition of the austenite proceeds with the formation of ferrite, pearlite, intermediate structures and martensite, and there also is up to 12-14% retained austenite. The maximum quantity of retained austenite (14%) originates at cooling rates matching the formation of the intermediate structure of the granular texture. Steel 12Kh1MF is very sensitive to the tempering temperature. A given tempering interval at 740-760°C is close to the lower critical point Ac_1. Consequently, the slightest excess of the tempering temperature (which is fully possible in plant units) leads to isolated

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ACCESSION NR: AP5010134

austenitization which starts as a rule, in sections enriched with carbon. The lowest values of impact strength were observed in specimens in which the austenite transformation proceeds with formation of the intermediate structure. The varied overall level of impact strength of the melts is connected with contamination of the metal by nonmetallic inclusions, i.e., the metallurgical nature of melting. Orig. art. has: 1 table, 3 graphs.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy trubnyy institut (Ukrainian Scientific Research Pipe Institute)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 002 OTHER: 001 JPRS

Card 2/2

"PLEKH[illegible], [illegible], kand. tekhn. nauk; RADCHENKO, R.[illegible], kand. tekhn. nauk; [illegible], [illegible], inzh.

Heating of rail steel ingots in regenerative pits. Stal' 25 no.8:837-840 S '65. (MIRA 18:9)

1. Kuznetskiy metallurgicheskiy kombinat i Vsesoyuznyy nauchno-issledovatel'skiy trubnyy institut.

Ro. J.

GALISHEV, V.S.; CHEREPANOV, V.I.; RADCHENKO, R.V.

Rules of selection for quadrupole exiton light absorption in cubic crystals. Fiz. tver. tela 3 no.2:484-491 F '61.
(MIRA 14:6)

1. Ural'skiy gosudarstvenny universitet im. A. M. Gor'kogo i Institut fiziki metallov AN SSSR.
(Exitons)
(Absorption of light)

ACC NR: AP7003159 (A,N) SOURCE CODE: UR/0294/66/004/006/0760/0767

AUTHOR: Aliyevskiy, M. Ya.; Radchenko, R. V.

ORG: Ural Polytechnic Institute im. S. M. Kirov (Ural'skiy politekhnicheskiy institut)

TITLE: Maximal conductivity of multicomponent mixtures of ionized gases

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 6, 1966, 760-767

TOPIC TAGS: plasma conductivity, gas ionization, gas thermodynamics, IONIZED GAS

ABSTRACT: The article presents a mathematical description of the conditions for the existence of a maximum in the conductivity of a mixture of ionized gases as a function of their thermodynamic parameters. In the absence of a magnetic field (or in a direction along the field) the following expression is valid to a sufficient degree of accuracy:

$$\sigma^{-1} = \Sigma_j \sigma_j^{-1} = \sigma_{ei}^{-1} + \sigma_{ea}^{-1}. \quad (1)$$

Here the term σ_{ei}^{-1} is determined by the collisions of the electrons with ions of all the components, and the term σ_{ea}^{-1} by the collisions of the electrons with non-ionized atoms. The conductivity of the j-th ionized gas can be expressed by a quantity of the order of the time of the free flight path of an electron in the gas

$$\sigma_j = \frac{n_e e^2 \tau_{ej}}{m_e}, \quad \tau_{ej}^{-1} = (\tau_j^+)^{-1} + \tau_j^{-1}. \quad (2)$$

Card 1/2 UDC: 533.932

ACC NR: AP7003159

Thus $$\sigma_{ei}^{-1} = \frac{m_e}{n_e e^2} \Sigma_j (\tau_j^+)^{-1}, \quad \sigma_{ea}^{-1} = \frac{m_e}{n_e e^2} \Sigma_j \tau_j^{-1}. \qquad (3)$$

On the above basis, the article derives mathematical expressions for the maximum conductivity and the optimum composition of a two-component ionized mixture, and for a gas (or mixture of gases) with one ionized additive. Orig. art. has: 31 formulas.

SUB CODE: 20/ SUBM DATE: 02Aug65/ ORIG REF: 005/ OTH REF: 002

Card 2/2

PHASE I BOOK EXPLOITATION SOV/5452

Donskoy, Ya. Ye., G.I. Kardash, and I.P. Lyalyuk, eds.

Mekhanizatsiya i avtomatizatsiya; sbornik statey ob opyte vnedreniya mekhanizatsii i avtomatizatsii na Khar'kovskikh mashinostroitel'nykh zavodakh (Mechanization and Automation; Collection of Articles on the Introduction of Mechanization and Automation in Khar'kov Machinery-Manufacturing Plants) [Khar'kov] Khar'kovskoye knizhnoye izd-vo, 1960. 373 p. 3,900 copies printed.

Editorial Board: S.A. Vorob'yev, Candidate of Technical Sciences; Chairman of the Editorial Board: P.I. Zmaga, Engineer; A.A. Kotlov, Engineer, V.I. Kuzubov, Engineer, A. Ye. Leonov, Docent, A.I. Tupitsyn, Candidate of Technical Sciences, and S.M. Khmara, Candidate of Technical Sciences; Eds.: Ya. Ye. Donskoy, G.I. Kardash, and I.P. Lyalyuk; Tech. Ed.: M.I. Linnova.

PURPOSE: This collection of articles is intended for technical and scientific personnel, outstanding workers, and shock workers of communist labor.

COVERAGE: The multifaceted experience of Khar'kov enterprises in the mechanization, automation, and improvement of manufacturing processes is generalized. The development of new machines, instruments, and production methods is considered and attention is given to newly established enterprises, and to the introduction of telemechanics in the Khar'kov gas-system management. By including concrete examples and facts, the authors of the various articles attempt to demonstrate the achievements of the Khar'kov industrial complex in fulfilling the resolutions of the June (1959) and July (1960) Plenums of the Central Committee of the Communist Party of the Soviet Union. No personalities are mentioned. There are no references.

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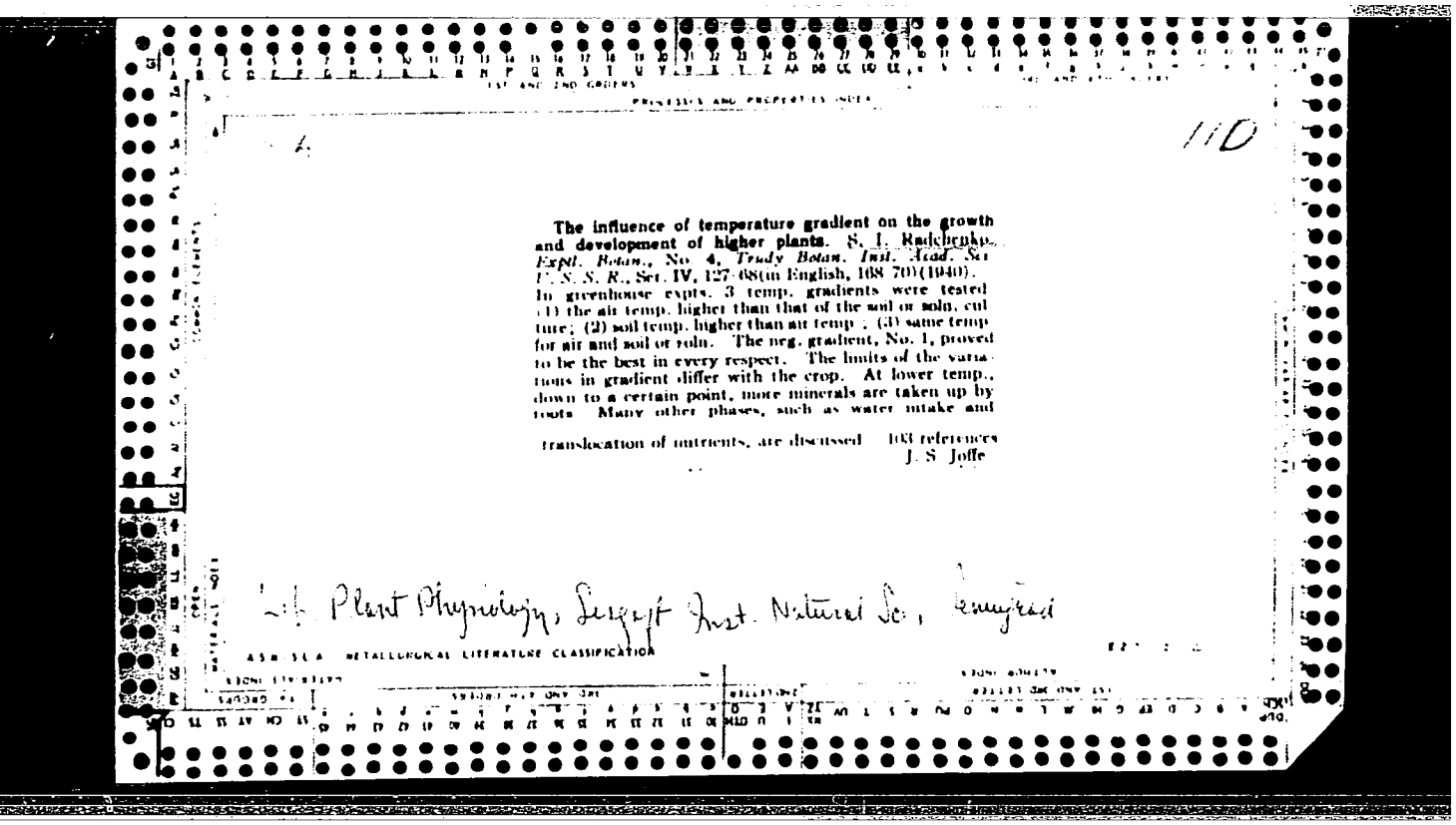

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The influence of temperature gradient on the growth and development of higher plants. S. I. Radchenko. *Expt. Botan., No. 4, Trudy Botan. Inst. Acad. Sci U. S. S. R., Ser. IV,* 127-68 (in English, 168-70) (1940). In greenhouse expts. 3 temp. gradients were tested (1) the air temp. higher than that of the soil or soln. culture; (2) soil temp. higher than air temp.; (3) same temp. for air and soil or soln. The neg. gradient, No. 1, proved to be the best in every respect. The limits of the variations in gradient differ with the crop. At lower temp., down to a certain point, more minerals are taken up by roots. Many other phases, such as water intake and translocation of nutrients, are discussed. 103 references.
J. S. Joffe

Inst. Plant Physiology, Leningrad State Inst. Natural Sc., Leningrad

RADCHENKO S. I.

RADTCHENKO (S. I.). Новая методика выращивания растений при разной температуре почвы и воздуха. [A new technique of growing plants under different temperatures of air and soil.]—*Acta Inst. bot. Acad. Sci. U.R.S.S.*, Ser. IV, Bot. Exp., v, pp. 55–71, 13 figs., 1941. [English summary.]

A detailed description is given of a technique for growing plants under controlled conditions of air and soil temperature.

RADCHENKO, S. I.

20855. Radchenko, S. I. i Skazkin, F. D. Novoye v biologii ozimykh elakov, Uchen. Zapiski (Leningr. gos. ped. in-T im Gertsena), t. LXXXII, 1949, s. 219-29. --Bibliogr: 11 nazv.

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949.

RADCHENKO, S.I.

Agriculture

Experimental training section in agricultural biology, Uchebn, posoble dia ped. i uchit. inst. Moskva, Uchpedgiz, 1951.

9. Monthly List of Russian Accessions, Library of Congress, December 1952 1953, Uncl.

RADCHENKO, S. I.

Uchebno-opytnyi agrobiologicheskii uchastok (Experimental plot for studying agricultural biology). Ucheb. posobie dlia ped. i uchit. in-tov. Pod red. F. D. Skazkina. Izd. 2-e, ispr. Moskva, Uchpedgiz, 1953. 511 p.

SO: Monthly List of Russian Accessions, Vol. 7, No. 6, Sep. 1954

RADCHENKO, S. I.

Summer study in Darwinism conducted by pedagogical institutes Leningrad, Ministerstvo prosveshcheniia RSFSR, 1954. 198 p.

1. Plant breeding.
2. Genetics.

RADCHENKO, S.I.

New method of studying plants under different soil temperatures.
Fiziol.rast. 2 no.6:581-585 N-D '55. (MLRA 9:5)

1. Gosudarstvennyy yestestvennonauchnyy institut imeni P.F. Lesgafta Akademii pedagogicheskikh nauk, Leningrad.
(Soil temperature)

RADCHENKO, S.I.

Artificial climate laboratory. Bot.zhur.41 no.2:254-257 F '56.
(MLRA 9:7)

1.Yestestvenno-nauchnyy institut imeni P.F.Lesgafta Akademii pedagogicheskikh nauk, Leningrad.
(Botanical laboratories)

M

COUNTRY : USSR
CATEGORY : Cultivated Plants. Grains. Legumes. Tropical Cereals.
ABS. JOUR. : RZhBiol., No. 3, 1959, No. 10896
AUTHOR : Malchenko, S. I.
INST. : Academy of Pedagogical Sciences.
TITLE : Experiments with Wide-Row Summer Sowings of Winter Rye.

ORIG. PUB. : Izv. Akad. ped. nauk RSFSR, 1957 (1958), vyp. 85, 124-133.

ABSTRACT : The suggested agricultural methods are directed at the development of river flood-plains and marshy lands in the central and northwestern regions of the country. The cultivation method indicated, is a means of controlling soaking, damping, freezing and lodging. Wide-row summer sowings are recommended with the companion cropping of the spaces between the rows with vetch-oats or oat-pea mixture (occupied fallow fields in winter), and without companion cropping in the spaces between the rows (bare fallow fields in winter). One of the obligatory procedures is the hilling of rye in autumn. Fallow fields occupied in winter,

CARD: 1/2

SKAZKIN, F.D.; KADCHENKO, S.I.

V.M.Liubimenko's pedagogical activities. Trudy Bot.inst. Ser.4 no.13:13-19 '59. (MIRA 13:3)
(Liubimenko, Vladimir Nikolaevich, 1873-1937)

RADCHENKO, S. I., Doc Bio Sci -- "Ecologic and physiologic principles of study fundamentals concerning temperature gradients of the environment and plants." Len, 1961. (Min Ed RSFSR. Len State Ped Inst im A. I. Gertsen) (KL, 8-61, 235)

RADCHENKO, S.I.; YAKOVLEVA, N.D.

Nonphotosynthetic function of chlorophyll in plants. Bot.zhur. 46 no.6:790-802 Je '61. (MIRA 14:6)

1. Botanicheskiy institut imeni V.L.Komarova AN SSSR, Leningrad.
(Chlorophyll)

RADCHENKO, S. I.

"The role of the temperature gradients in growth and morphogenesis of higher plants."

report submitted for 10th Intl Botanical Cong, Edinburgh, 3-12 Aug 64.

AS USSR, Leningrad.

RADCHENKO, S.I.; KONOVALOV, I.N.; POZDOVA, I.M.

Cold resistance of corn in the Karelian Isthmus. Trudy Bot.inst. Ser.4 no.17:53-72 '64. (MIRA 18:1)

RYCHENKO, S.I.

Wide-row seedings of rye in the northwestern region of the U.S.S.R. Trudy Bot.inst. Ser.4 no.3:73-90 '46.

(MIRA 18:1)

PETROV, A. A.; KADCHENKO, S. I.; MINGALEVA, K. S.; SAVICH, I. G.; LEBEDEV, V.B.

Alkyl thioenynes and their analogs. Part 1: Synthesis and properties of vinylacetylenic thio-, seleno-, and telluro ethers. Zhur. ob. Khim. 34 no.6:1899-1905 Je '64. (MIRA 17:7)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

RADCHENKO, S.I.; PETROV, A.A.

Alkylthioenynes and their analogs. Part 2: Addition of sulfenyl chlorides to vinylacetylene. Zhur. org. khim. 1 no.1:47-51 Ja '65. (MIRA 18:5)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

[illegible], [illegible]; [illegible], [illegible] N.; [illegible], A.A.

1,3-Dipolar addition to unsaturated compounds. Part 9: Addition of 1,3-diphenylnitrilimine to alkylthioenynes and their analogs. Zhur. org. khim. 1 no.1:51-57 Ja '65. (MIRA 18:5)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

RADCHENKO, S.I.; PETROV, A.A.

Alkylthioenynes and their analogs. Part 5: Addition of lithium-alkyls to alkylthiovinylacetylenes. Zhur. org. khim. 1 no.6:993-996 Je '65. (MIRA 18:7)

PANCHENKO, S.I.; PETROV, A.A.

Alkylthiovinylacetylenes and their analogs. Part 2. Course of halogenation and hydrohalogenation of alkylthiovinylacetylenes. Zhur. org. khim. no.6:987-993 Je '65. (MIRA 18:7)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

[illegible], S.I.; CHISTOKLETOV, V.N.; PETROV, A.A.

1,3-Dipolar addition to unsaturated compounds. Part 12: Addition of benzonitrile N-oxide and α,N-diphenylnitrone to alkyl thiocyanates and their analogs. Zhur. ob. khim. 35 no.10:1735-1739 O '65. (MIRA 18:10)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

RADCHENKO, S.I.; PETROV, A.A.

Alkylthioenynes and their analogs. Part 7: Synthesis and properties of alkylthioisopropenylacetylenes and their analogs. Zhur. org. khim. 1 no. 12:2115-2118 D '65 (MIRA 19:1)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta. Submitted November 21, 1964.

SLAVGORODSKAYA, Ye.Ya.; RADCHENKO, S.T.; ODRINSKIY, V.N.

Manufacture of lightweight refractories from semidry materials.
Ogneupory 29 no.4:151-153 '64. (MIRA 17:4)

1. Opornaya tekhnologicheskaya laboratoriya tresta "Ogneupornerud".

POPOV, V.K.; VALEYEVA, N.N.; RADCHENKO, T.G.

Micrologging is an efficient method of gas prospecting. Gaz. prom. 4 no.10:10-12 O '59. (MIRA 13:2)
(Krasnodar Territory--Gas, Natural)
(Krasnodar Territory--Prospecting)

TELENGA, N.A.; GULEVATYY, Ye.F.; RADCHENKO, T.G.

Dates for dusting pea fields against the weevil. Zashch.rast.ot vred.i bol. 7 no.5:26-27 My '62. (MIRA 15:11)
(Pea weevil--Extermination) (Spraying and dusting in agriculture)

BOKSERMAN, Ye.I.; RADCHENKO, V.A.

Speeding up production control. Leg.prom. 18 no.10:49-50 O '58.
(Tanning) (Production control) (MIRA 11:11)

BOKSERMAN, Ye.I.; CHIZHMAKOVA, V.P.; RADCHENKO, V.A.

Method of determining the presence of the hide substance in leather, excluding nitrogen containing substances. Kozh.-obuv.-prom. 4 no.4:22-23 Ap '62. (MIRA 15:5)
(Leather--Analysis)

BOKSERMAN, Ye. I.; CHIZHMAKOVA, V. P.; RADCHENKO, V. A.

Simplified method of analyzing shredded glue stock. Kozh. obuv. prom. 4 no.10:25-26 O '62. (MIRA 15:10)

(Glue—Analysis)

RADCHENKO, V. D.

"Protection of D. C. Electro-Locomotives Against Atmospheric Excess Voltages." Official opponents were: Doctor of Technical Sciences M. A. CHernyshev and Candidate of Technical Sciences D. V. Razevig.

Dissertation for the Degree of a Candidate of Technical Scinces ~~xxi 1946-1953~~.
At the All-Union Scientific Research Institute of Railroad Traffic Engineers.

Bibliography, 17 titles

112-2-3489

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 2, p.141 (USSR)

AUTHOR: Radchenko, V.D.

TITLE: Improving the БВП-1 Type High-speed Circuit Breaker (Usovershenstvovaniye bystrodeystvuyushchego vyklyuchatelya tipa BVP-1)

PERIODICAL: In Sbornik: Materialy nauch.-tekhn. soveshchaniya po tyagovomu elektrooborudovaniyu. Noyabr' 1953, Riga, 1955, pp.124-128

ABSTRACT: The tripping time of the БВП-1 circuit breaker depends on the form of the short-circuit current curve and varies from 0.015 to 0.003 seconds. The total short-circuit-limiting time lasts to approximately 0.02 seconds. Ionization of the gases over the spark quenching chamber is so great

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Improving the БВП -1 Type High-speed Circuit Breaker (Cont.)

that the arc burns steadily over the spark quench. The БВП -1 circuit breaker does not always ensure short circuit current cut-off. The TsNII MPS has modernized the circuit breaker, making the following design changes: they have added an inductive shunt in parallel with the demagnetizing turn; they have designed a new arc-control chamber; they changed the magnetic blower system by reducing the width of the slot in the lower part of the arc-control chamber to 4.5 mm; they designed the magnetic blower system as an open circuit torus ring with vertical poles distributing part of the magnetic flux upwards from the contacts; they cut the interpole spacing to 31 mm in the contact zone and built a special labyrinth, bell-mouthed chamber fitted at the top with deionization plates for deionizing the gases. In the process of testing the improved circuit breaker, 119 short circuits, of 3,500 amp and more, were broken and in every case the break was clean and reliable. The TsNII MPS has put out blueprints and manufactured a large quantity of such circuit breakers. [TsNII MPS] I.V.I.

ASSOCIATION: The All-Union Central Scientific Research Institute of the Ministry of Communcations (TsNII MPS)

Card 2/2

RADCHENKO, V.D., kandidat tekhnicheskikh nauk.

Atmospheric overcurrent protection of direct curring electric locomotives. Trudy TSNII MPS no.88:44-74 '53. (MLRA 7:7)
(Electric railroads--Equipment and supplies)

RADCHENKO, Viktor Danilovich; BELYAYEV, I.A., inzhener, redaktor; BOBROVA, Ye.N., tekhnicheskiy redaktor.

[The drag of cars in subways] Soprotivlenie dvizheniiu vagonov metropolitena. Moskva, Gos.transp.zhel-dor.izd-vo, 1957. 69 p. (MLRA 10:4)

(Subways)

8(3) PHASE I BOOK EXPLOITATION SOV/1450

Radchenko, V.D., Candidate of Technical Sciences, B.N. Rebrik, Candidate of Technical Sciences, S.D. Sokolov, Candidate of Technical Sciences, N.D. Sukhoprudskiy, Candidate of Technical Sciences

Povysheniye nadezhnosti raboty ustroystv energosnabzheniya (Increasing Operating Reliability of Power-supply Installations) Moscow, Transzheldorizdat, 1958. 101 p. (Series: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta. Trudy, vyp. 148) 2,000 copies printed.

Sponsoring Agency: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta

Ed.: Kudryavtsev, M.V., Engineer; Tech. Ed.: Bobrova, Ye.N.

PURPOSE: This collection of articles is intended for scientists, engineers and technicians working in railroad electrification.

COVERAGE: The articles cover the following subjects: determination of steady-state short-circuit currents, d-c arc rupture in horn-type arresters, method of preventive testing of insulators without

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dismantling, increase of reliability of inverters and methods of protecting electric locomotives against disruption of power regeneration during breakdowns of the inverter.

TABLE OF CONTENTS:

Substation. The author discusses the results of this investigation, which considered the effect of plate-cathode capacitance and damping resistances; the effect of large inductance in the inverter circuit and recommendations for selecting the value of this inductance; and conditions for formation of the cathode spot on the control grid. In order to reduce the probability of inverter breakdown, TsNII MPS recommended a decrease in plate voltage. This measure was justified in practice. There are 4 Soviet references.

Rebrik, B.N. Candidate of Technical Sciences. Protection of Electric Locomotives Against Disruption of Regenerative Braking Due to Breakdown of the Inverter 90

The author carried out investigations on the above problem in the electrification division of TsNII MPS. In this article he discusses the possibile methods of preventing failures in regenerative braking, especially by a method of connecting a resistor in parallel with the inverter circuit-breaker. There are 2 Soviet references.

AVAILABLE: Library of Congress

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JP/sfm
4-22-59

RADCHENKO, V.D., kand. tekhn. nauk; REBRIK, B.N., kand. tekhn. nauk; SOKOLOV, S.D., kand. tekhn. nauk; SUKHOPRUDSKIY, N.D., kand. tekhn. nauk; KUDRYAVTSEV, M.V., inzh., red.; BOBROVA, Ye.N., tekhn. red.

[Increasing operational reliability of power-supply installations] Povyshenie nadezhnosti raboty ustroistv energosnabzheniia. Moskva, Gos. transp. zhel-dor. izd-vo, 1958. 90 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.148). (MIRA 11:6)

(Electric railroads—Wires and wiring)
(Electric railroads—Substations)

8(2), 32(3) PHASE I BOOK EXPLOITATION SOV/2471

Radchenko, Viktor Danilovich, Sergey Dmitriyevich Sokolov, and Nikolay Dmitriyevich Sukhoprudskiy

Perenapryazheniya i toki korotkogo zamykaniya v ustroystvakh elektrifitsirovannykh zheleznykh dorog postoyannogo toka (Overvoltages and Short-circuit Currents in Systems of Electrified DC Railroads) Moscow, Transzheldorizdat, 1959. 303 p. 3,000 copies printed.

Ed.: S. K. Krylov, Engineer; Tech. Ed.: P. A. Khitrov.

PURPOSE: This book is intended for engineering and technical personnel of electrified railroads and for personnel of plants engaged in the construction and repair of rolling stock equipment.

COVERAGE: The authors discuss excess voltages occurring in electric traction systems and their effect on the operation of rolling stock equipment and traction substations. They also describe methods of testing the insulation of equipment and methods of calculating short-circuit current parameters. The basic principle of operation of circuits used for the protection of

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power-supply systems and rolling stock equipment against excess voltages and short-circuit currents are also presented. Chapters I, II, IV, XI and XVII were written by N. D. Sukhoprudskiy; Chapters VIII, IX, X and XVI by V. D. Radchenko; Chapters V, VI, VII and XII by S. D. Sokolov; Chapter III by N. D. Sukhoprudskiy and V. D. Radchenko; Chapter XIII by S. D. Sokolov and B. N. Grin'kov; Section 1 of Chapter XIV by V. D. Radchenko; Section 2 of Chapter XIV by V. D. Matsnev; Sections 1, 2 and3 of Chapter XV by V. D. Radchenko; Section 4 of Chapter XV by V. D. Matsnev; and Chapter XVIII by N. D. Sukhoprudskiy and A. N. Pronin. The authors thank V. I. Kartashev and B. Ye. Geronimus for reviewing the manuscript. There are 82 references: 73 Soviet (including 1 translation), 6 English, 2 French and 1 German.

TABLE OF CONTENTS:

Overvoltages and Short-circuit Currents (Cont.) SOV/2471

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Overvoltages and Short-circuit Currents (Cont.)

PART III. TESTING AND PREVENTIVE MEASURES AGAINST DAMAGES TO INSULATION

AVAILABLE: Library of Congress

Card 9/9 JP/mg
11-[illegible]-59

RADCHENKO, V.D., kand.tekhn.nauk

Protection of electric traction equipment at a.c. and d.c. junction stations. Elek. i tepl. tiaga 4 no.5:14-16 My '60.
(MIRA 13:7)

(Electric railroads)

S/196/62/000/004/023/023
E194/E155

AUTHORS: Tikhmenev, B.N., and Radchenko, V.D.

TITLE: An a.c. motor-coach with silicon rectifiers

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.4, 1962, 8-9, abstract 4 L32. (Elektr. i teplovozn. tyaga, no.8, 1961, 36-39).

TEXT: In June 1961 TsNII MPS, in collaboration with the manufacturers, developed the first Soviet motor-coach unit with silicon rectifiers, based on an experimental unit type ЭР 7 (ER7). The unit is intended for supply from an overhead system of 25 kV, 50 c/s at a speed of 130 km/hour. A sufficiently reliable type of power silicon rectifier was soon developed for a continuous rating of 200 A and inverse voltage up to 400 V. The active part was located in a copper frame, 32 mm in diameter and 30 mm long. Only silicon single-crystals with one molecule of impurity to 1 - 10 milliards (10^9) of silicon molecules can be used for silicon power rectifiers. The single-crystal sheet is 1.5 mm thick, 20 mm in diameter; stable operation of the rectifier is ensured by filling the chamber with nitrogen and

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sealing it hermetically. As it was particularly difficult and important to solve the problem of protecting the rectifier against overload and short circuit, a special device was developed by the Institute; it operates on the principle of arcless switching off of current in the arms of a bridge circuit. The isolator operating time is 0.0008 seconds. The control system for the device consists of contactless elements and fulfils the necessary operations in strictly defined order. The protective equipment is brought into action on the occurrence of overload, breakdown of one valve, or if the voltage on the rectifier rises above 1.5 times the rated value. The motor-coach carries four traction motors type PT-518 (RT-51V) each with an output of 180 kW. The motors are connected in two parallel groups of two in series; they are supplied through silicon rectifiers connected in bridge circuit. Each arm of the bridge consists of three parallel circuits each with twelve rectifiers in series. To ensure uniform distribution of inverse-voltage, the rectifiers are shunted by resistances. When the voltage

An a.c. motor-coach with silicon... S/196/62/000/004/023/023
E194/E155

was controlled by transformer tap-changing the valve transfer circuit was found to be very effective. The Rizhskiy vagonnyy zavod (Riga Wagon Works) will soon produce an experimental motor-coach train type ЭР9 (ER9) using silicon rectifiers. 9 figures.

[Abstractor's note: Complete translation.]

Card 3/3

RADCHENKO, V.D., kand.tekhn.nauk; PERTSOVSKIY, L.M., inzh.; KHATSKELEVICH, M.N., inzh.; KLIMOV, N.N., inzh.; GROMOV, S.A., kand.tekhn.nauk

Arswering readers' queries. Elek.i tepl.tiaga 5 no.11:43-44 N '61. (MIRA 14:11)

(Electric locomotives)
(Diesel locomotives)

RADCHENKO, V.D., kand.tekhn.nauk

Protection of semiconductor rectifiers against short circuit currents and overvoltage. Vest. TSNII MPS 20 no.2:9-12 '61. (MIRA 14:3)

(Electric locomotives--Equipment and supplies)

RADCHENKO, V.D.; kand. tekhn. nauk; FARAFONOV, A.V., inzh.; DOROSH, V.P., inzh.

Modernized rapid-action switch-off for d.c. trains. Elek. i tepl. tiaga 7 no.9:19-21 S '63. (MIRA 16:10)

RADCHENKO, Viktor Danilovich, kand. tekhn. nauk; RADIONOV, Nikolay Il'ich, inzh.; KOSTIN, Nikolay Aleksandrovich, inzh.; KUCHKO, E.A., red.

[Protection of semiconductor rectifiers of electric rolling stock] Zashchita poluprovodnikovykh vypriamitelei elektropodvizhnogo sostava. Moskva, Transport, 1965. 114 p. (MIRA 18:3)

RADCHENKO, V.D., kand. tekhn. nauk; RYKOV, I.I., kand. tekhn. nauk; FARAFONOV, A.V., kand. tekhn. nauk

Calculation of the working resistance of the valve commutation discharger. Vest. TSNII MPS 24 no.1:5-8 '65.
(MIRA 18:6)

(A) L 01964-67 EWT(d)/EWP(l)/EWP(i)

ACC NR: AM3005024 Monograph UR/

Radchenko, Viktor Danilovich; Radionov, Nikolay Il'ich; Kostin, Nikolay Aleksandrovich

Protection of semiconductor rectifiers of electric rolling stock / (Zashchita poluprovodnikovykh vypryamiteley elektropodvizhnogo sostava) Moscow, Izd-vo "Transport", 65. 0114 p. illus., biblio., fold. diagr. 2,500 copies printed.

TOPIC TAGS: railway equipment, railway rolling stock, locomotive engineering, electronic equipment, semiconductor rectifier, electronic rectifier, electronic test equipment, electronic signal, electronic switch

PURPOSE AND COVERAGE: This book describes the design and structure of instruments used for the protection of semiconductor rectifiers of electric rolling stock of type EP7k, EP9, VL60k and VL80k and K. Operating and repair instructions are given based on their usage as they were tested in train depo of Gorkiy and North Caucasus Line. The book is intended for workers at train depos, which deal with the operation and repair of electric rolling stock with semiconductor rectifiers.

TABLE OF CONTENTS (abridged):

UDC: 621.335

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L 01958-67

ACC NR: AM6005024

Ch. III. Protection of semiconductor rectigiers of electric rolling sotcks of EP7[K] and EP9 types with high speed conctactors --56

Ch. IV. Protective devices of semiconductor rectifiers of rolling stock type K -89

Ch. V. Protective devices of semiconductor rectifiers of rolling stock type VL60[K] and VL80[K] -- 113

SUB CODE:13,09/SUBM DATE: 25Feb65/ ORIG REF: 009/

Card 2/2 fv

ACC NR: AT6028993 SOURCE CODE: UR/0000/66/000/000/0310/0315

AUTHORS: Mikhaylovskiy, L. K.; Balakov, V. F.; Puchkov, V. S.; Radchenko, V. F.

ORG: none

TITLE: Mixing of electromagnetic signals on a magnetically monoaxial ferrite

SOURCE: Vsesoyuznoye soveshchaniye po ferritam. 4th, Minsk. Fizicheskiye i fiziko-khimicheskiye svoystva ferritov (Physical and physicochemical properties of ferrites); doklady soveshchaniya. Minsk, Nauka i tekhnika, 1966, 310-315

TOPIC TAGS: ferrite, magnetic property, magnetic material, electromagnetic mixing

ABSTRACT: The possibility of constructing ferrite mixers for use in the 4-mm wavelength range was investigated. This work supplements the results of K. M. Polivanov, L. K. Mikhaylovskiy, S. A. Medvedev, B. P. Pollak, and V. F. Balakov (Sb. Ferrity, Izd. AN BSSR, Minsk, 567, 1960). The experiments were carried out on magnetically monoaxial ferrite specimens. The experimental procedure was identical to the one described by L. K. Mikhaylovskiy, V. P. Makarishchev, B. P. Pollak, and V. A. Fabrikov (Radiotekhnika i elektronika, No. 7, 1178, 1961). It was found that the intensity of the intermediate signal P_{int} was given by $P_{int} = AP_sP_g$, where A is a constant characteristic of the particular ferrite, P_s -- the intensity of the ultrahigh frequency signal, and P_g -- the intensity of the heterodyne signal respectively.

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ACC NR: AT6028993

The authors conclude that it is possible, in principle, to mix two electromagnetic signals in the millimeter wavelength region by means of magnetically monoaxial ferrites at relatively small external magnetizing fields. Orig. art. has: 5 equations.

SUB CODE: 09, 11/ SUBM DATE: 22Dec65/ ORIG REF: 003
20

Card 2/2

SHAMRAYEVSKIY, I.M.; RADCHENKO, V.G.

Technology of making boiler cylinders at the "Krasnyi Kotel'shchik" plant. Proizv. opyt v obl. svar. no.1:5-27 '56. (MLRA 9:10)

(Boilers--Welding)

RADCHENKO, V.G.

135-3-6/17

SUBJECT: USSR/Welding.

AUTHOR: Radchenko, V.G., Engineer

TITLE: Electric Slag-Welding of Steel "15XMA" (Elektroshlakovaya svarka stali "15XMA").

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 3, pp 11 - 15, (USSR).

ABSTRACT: The article contains the results of experimental work on the slag-welding method carried out at the Taganrog Plant "Krasnyy Kotel'shchik", and which is being introduced into the plant's technology. It is mentioned that this method is widely used by other plants (4, Paton, B.E., 5, Voloshkevich).

The welding of circular butt joints in boiler collectors of 450 mm inside diameter and 40 mm wall thickness which are made of "15XMA"-steel is described as one example of replacing manual welding by the slag-welding method. The "15XMA"-steel has high mechanical qualities and it is widely used in industry, but due to certain difficulties in its welding technology, the aforementioned collectors were previously welded manually. The composition of steel "15XMA is in % (as prescribed by "BTY410-2176"): 0.10-0.18 C, 0.17-0.37 Si, 0.40-0.70 Mn, 0.80-1.10 Cr, 0.40-0.55 Mo, $\leq$ 0.03 S, $\leq$ 0.035 P.

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135-3-6/17

TITLE: Electric Slag-Welding of Steel "15XMA" (Elektroshlakovaya svarka stali "15XMA").

The composition of welding rods used "СВ-12ХМ" (according to "ГОСТ 2246-54"): ≤ 0.12 C, 0.15-0.35 Si, 0.40-0.70 Mn, 0.80-1.10 Cr, 0.40-0.60 Mo, 0.03 S, ≤ 0.03 P, ≤0.030 Ni. The composition (in %) of the fluxes applied is as follows: flux "ТК-ДСП" - 47.0-48.0 SiO_2, 38.0-39.0 MnO, up to 3.0 Al_2O_3, 4.50-3.50 CaO, up to 1.5 FeO, 2.50 TiO_2; "flux ФЦ-7" - 45.0-48.0 SiO_2, 24.0-27.0 MnO, up to 3.0 Al_2O_3, up to 3.0 CaO, 5.0-6.0 CaF_2, 16.0-18.0 MgO, up to 1.5 FeO, 0.6-0.8 K_2O+Na_2O. The cited fluxes are the plant's own production, their granulometric composition is given in the article. The welding device "A-365", serving for welding circular seams on walls of 40-150 mm thickness with one electrode, is described. A special internal water-cooled pressure ring (the construction is described and shown by drawings) is used to force the weld metal on the inside of the tubes being welded into the same level of the tube surface in the very welding process.

Experimental butt welding of pipes of 530/450 mm diameter was done under the following conditions: 38-40V, 450-500 a, d.c. of

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135-3-6/17

TITLE: Electric Slag-Welding of Steel "15XMA" (Elektroshlakovaya svarka stali "15XMA").

reverse polarity, feed of welding wire 216 m/hr, welding wire of 3 mm diameter and, grade "12XM" (ГОСТ 2246-54), effective working length of electrode of 80-100 mm, gap width between faces 22 mm, depth of slag bath 35-45 mm, welding fluxes "ТХЗ-Д5П" and "ФЦ-7", welding speed of 1.7 m/hour.

The test results correspond to the established technical requirements ("ВТУ410-2036-51"). Machining the faces for welding is eliminated and replaced by oxy-acetylene cutting, also pre-heating and post-heating is eliminated. The quality of weld metal is more uniform than in hand welding. Welding one circular butt joint is speeded up 3 to 4 times and more.

The work was done under consultation of Professor K.B. Lyubavskiy Doctor of Technical Sciences.
The article contains 3 tables, 3 drawings, 3 photographs and lists 6 references (all Russian).

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135-3-6/17

TITLE: Electric Slag-Welding of Steel "15XMA" (Elektroshlakovaya svarka stali "15XMA").

ASSOCIATION: Taganrog plant "Krasnyi Kotel'shchik" (Taganrogskiy zavod "Krasnyi Kotel'shchik").

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress

Card 4/4

RADCHENKO, V. G.

25 (1) SOV/135-59-4-15/18

AUTHOR: Maslov, G. A., Docent, Scientific Secretary of the Welding Section

TITLE: A Summary of Work Done by the Welding Sections of NTO MAShPROM in 1958 (Itogi raboty sektsiy svarki NTO MAShPROM za 1958 g)

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 4, pp 42 - 44 (USSR)

ABSTRACT: Conferences organized by the central (TsP) and the 21 existing oblast' Welding Sections of NTO MAShPROM are listed, starting with 3 All-Union conferences held in 1958. The Sections activities included the organization of conferences, courses (seminars), excursions to plants within the USSR and reports of members after journeys abroad, lectures and competitions. Annual sessions on scientific and practical welding work have become traditional with the Moscow and Leningrad Sections. Contacts with foreign welding organizations have been extended, and the TsP was represented at the Vienna congress of the International Welding Institute by Professors K. V. Lyubavskiy and

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A Summary of Work Done by the Welding Sections of NTO MAShPROM in 1958

N. O. Okerblom. It has been accepted as member of the Institute and is preparing for the next international congress, at which there will be a competition for the best work on repair welding. Candidate of Technical Sciences G. D. Nikiforov (Moscow), Engineer V. G. Radchenko (Barnaul) and Candidate of Technical Sciences I. R. Patskevich (Chelyabinsk), took part in the conference in Hungary, where G. D. Nikiforov read a report "Automatic Arc Welding Aluminum Alloys", and V. G. Radchenko "Electric Slag Welding in Building Boilers". Professor K. V. Lyubavskiy and Engineer Ye. P. L'vova were at the conference in Czechoslovakia. The following salient facts are also mentioned: 1) The Rostov Section directed work on the use of natural gas for welding and the method is being employed at the plants "Rostsel'mash", "Krasnyy Aksay", "Prodmash", "Neftemash", "Krasnyy Kotel'shchik" and others; 2) the Rostov Sovnarkhoz started construction of an electrode factory at Krasnyy Sulin on the recommendation of the Rostov Section; 3) there is a competition in progress for the best work on development and practical introduction of advanced welding

A Summary of Work Done by the Welding Sections of NTO MAShPROM in 1958

technique, with 116 NTO members participating and 29 projects submitted (the results will be published in the following issue, Nr 5, of this periodical). The TsP has been designated to coordinate work in the field of welding in the country and addressed all NTOs on this matter. The first result was an All-Union conference on the prospective development of welding, organized by the Gosplan of the USSR, VNIIESO, GNTK and NTO MAShPROM.

ASSOCIATION: TsP NTO MAShPROM.

Card 3/3

RADCHENKO, V.G.; SHANYUK, V.S.

Electric slag welding of spherical electric dehydrators.
Avtom.svar. 13 no.6:37-41 Je '60. (MIRA 13:7)

1. Barnaul'skiy kotel'nyy zavod (for Radchenko). 2. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR (for Shanyuk).
(Electric welding--Equipment and supplies)
(Pressure vessels--Welding)

RADCHENKO, V.G.; ARSENKIN, V.T.; ZOTKIN, I.A.

Electric slag remelting of tool steel scrap. Avtom. svar. 16 no.6:63-65 Je '63. (MIRA 16:7)

1. Altayskiy politekhnicheskiy institut im. I.I.Polzunova.
(Tool steel--Electrometallurgy)
(Scrap metals--Electrometallurgy)

RADCHENKO, V.G.

Mine builders in areas beyond the Arctic Circle during the seven-year-plan. Shakht. stroi. 9 no.8 [illegible] Ag '65. (MIRA 18:8)

1. Nachal'nik kombinata Vorkutashakhtostroy.

L 65083-65 EWT(d)/EWT(m)/EWA(d)/EWP(v)/EWP(t)/EWP(k)/EWP(h)/EWP(z)/EWP(b)/
ACCESSION NR: AP5021223 EWP(1) JD UR/0125/65/000/008/0034/0036
621.791.756.054:621.90.02

AUTHOR: Radchenko, V.G. (Engineer); Arsenkin, V.T. (Engineer); Shabalin, V.N. (Engineer); Likhosherstov, D.M. (Engineer)

TITLE: Increasing the hardness of cutting tools with the aid of electroslag remelting

SOURCE: Avtomaticheskaya svarka, no. 8, 1965, 34-36

TOPIC TAGS: electroslag remelting, tool hardness, cutting tool, ingot mold, high speed steel, dendrite directivity

ABSTRACT: The article presents the results of an investigation of the positions of the principal axes of dendrites with respect to the edge of cutting tools on the hardness of these tools. Different dendrite directivities were attained by using ingot molds of different diameters (50-100 mm) and varying the regime of electroslag remelting (U = 27-43 v, I_w = 600-2700 a) of electrodes with diameters of 20-75 mm. The electroslag remelting of the wastes of high-speed steel was performed in open-type water-cooled copper ingot molds, with broken or worn tools of furnace-remelted tool wastes (broaches, augers, reamers, etc.) being used as the consu-

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ACCESSION NR: AP5021223

mable-electrode rods. Dendrite directivity was determined by examining transverse and longitudinal macrosections of the ingots. Tool hardness was examined by cutting out 15x19x9 mm plates from the ingots, on taking into account dendrite directivity, placing them in tool holders, and then operating them as part of grinding machines, with subsequent comparative determination of the wear and blunting time of such cutting tools. Findings: cutting tools fabricated from small ingots (diameter up to 100 mm) obtained as a result of the electroslag remelting of the wastes of high-speed steel are, even when the dendrite directivity is not optimal, some 50 percent harder than cutting tools fabricated from rolled metal. An efficient utilization of the directivity of the principal dendrite axes makes it possible to enhance the hardness of metal 2-2.5 times. The peening of small ingots of steel remelted by the electroslag method increases the plasticity of the cutting tools but reduces their hardness to values roughly the same as the hardness of cutting tools made of the same high-speed steel but without electroslag remelting. The higher hardness of tools made of cast steel obtained by the electroslag method is due to the nature of the process of the electroslag melting and crystallization of small ingots, and possibly also to a more disperse and distinctive distribution of the carbides and other components throughout the ingot cross section. The clarification of these questions will be the subject of special studies. Orig. art. has:

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L 65083-65

ACCESSION NR: AP5021223

3

3 figures, 1 table.

ASSOCIATION: Altayskiy politekhnicheskiy institut im. I. I. Polzunova (Altay Polytechnic Institute)

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SUBMITTED: 18Feb65 ENCL: 00 SUB CODE: MM, IE

NO REF SOV: 005 OTHER: 000

MLR

Card 3/3

PADCHENKO, V. M.

Stanochnye prisposobleniia v mashinostroenii (Machine tool attachements in machine-building). Moskva, Mashgiz, 1952. 560 p.

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